

BIOCHAR SUMMARY – offering a virtuous feedback cycle of MULTIFACETED ENVIRONMENTAL SOLUTIONS

Biochar is a stable carbon commodity produced by pyrolysis (anoxic burning) of waste or purpose-grown organic matter. It offers solutions for a multitude of issues across the environmental spectrum through a VIRTUOUS cycle on inter-related applications. Some of the current uses and research focus on avoided costs from biochar's ability to:

- Reduce agricultural organic waste; improve ag and environmental sustainability and animal health;
 - Used for healthier poultry and farm animal bedding which is then itself turned into biochar; convert poultry and animal waste (manure and dead animals) into beneficial biochar; can filter ag farmyard runoff to reduce pollutants.
 - Feed to animals to reduce their methane production
 - Use the wood oil co-product to substitute for more toxic products like formaldehyde or copper/zinc to treat farmstock against foot and mouth.
- Improve soil health;
 - Increase crop yield (10-20% average)
 - Reduce urban food waste, green waste and sewage sludge mountains, turning these into beneficial biochar products that are commercially viable
 - These kinds of feedstocks are the basis for biochar-based natural/organic slow-release fertilizers and can be used as a component of commercially produced peat-free horticultural soils
- Reduce damaging floods, rainstorm and hydrologic impacts that are being exacerbated under climate change;
 - Improves the ability of soils to absorb heavy rain and hold it in the soil for future crop use.
 - Reduces erosion and sedimentation which in turn reduces nutrient pollution in rivers/streams.
- Protect/improve water/river quality;
 - Removes or reduces PFAS, nutrients, binds heavy metals, etc in impaired rivers, lakes and sewage systems.
- Improve air quality by avoided open air burning; reduces composting which is associated with off-gassing that accentuates atmospheric methane and carbon levels;
 - sequesters atmospheric carbon dioxide as the only shovel-ready, scalable and currently cost-effective* means available to reduce atmospheric carbon levels to achieve 'negative zero' atmospheric greenhouse gas concentrations – which will help reduce climate change impacts (in association with 'net zero' emission targets).
- Store stable carbon long term (100-1,000 years) in soil, rivers, lakes, oceans – or by combining biochar into building materials such as concrete, asphalt, wall board, tiles, insulation – even polystyrene, etc.
- Produce alternative energy, support community heat systems through the pyrolysis process
- Improve forest health and reduce the severity of forest fires
- And more...
- Qualify for carbon credit funding with Voluntary Carbon Credit programs, such as Puro.Earth and Verra
 - *** And can at least recoup its own production costs as a commercial commodity; and at the right production scale, can make a profit.**